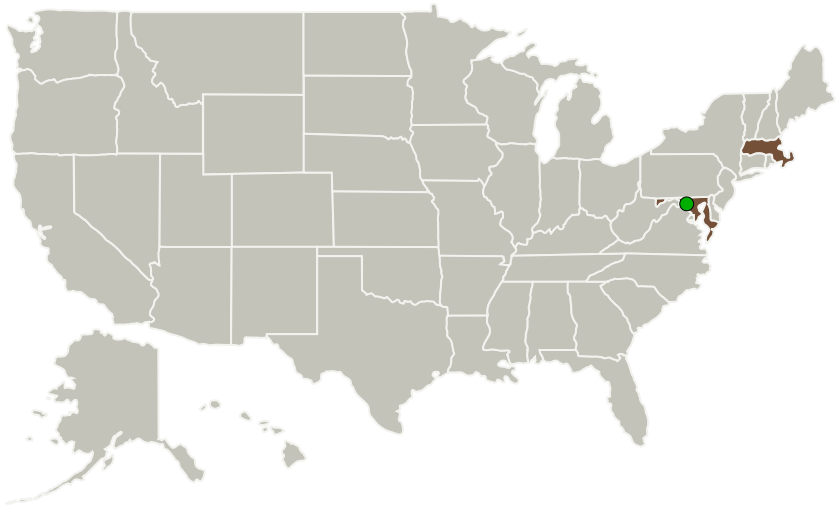
Solid State KA-Band, Solid State W-Band and TWT Amplifiers, Phase I

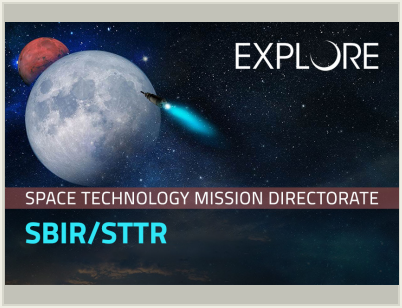
Completed Technology Project (2010 - 2010)

Project Introduction

Phase I of the proposal describes plans to develop a state of the art transmitter for the W-Band and KA -Band Cloud Radar system. Our focus will be concentrated in the design of a dry high voltage assembly including both the power supply and modulator part of the system, thus eliminating the oil, which adds weight and presents complicated sealing problems during environmental conditions during system operatation. The system will be suitable for operatation at ground and aircraft environments and during extreme temperature ranges from -40 degrees centigrade to + 85 degrees centigrade. The simulation will represent actual testing conditions under EIK loading. The second part of our effort will be directed to develop an FR high power amplifier and a sophisticated combiner to direct the output energy to the antenna. The success of this part of our effort will result in the replacement of the EIK tube which is the most expensive part of our system with an RF power amplifier system.

Primary U.S. Work Locations and Key Partners





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Organizations Performing Work	Role	Type	Location
Pulse Systems, Inc.	Lead Organization	Industry Women-Owned Small Business (WOSB)	Canton, Massachusetts
Goddard Space Flight Center(GSFC)	Supporting Organization	NASA Center	Greenbelt, Maryland

Primary U.S. Work Locations	
Maryland	Massachusetts

Project Transitions

January 2010: Project Start

July 2010: Closed out

Closeout Summary: Solid State KA-Band, Solid State W-Band and TWT Amplifiers, Phase I Project Image Solid State KA-Band, Solid State W-Band and TWT Amplifiers, Phase I

Closeout Documentation:

- Final Summary Chart Image*(https://techport.nasa.gov/file/139478)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Pulse Systems, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

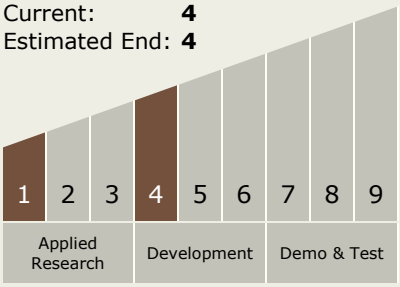
Carlos Torrez

Principal Investigator:

John Lagadinos

Technology Maturity (TRL)

Start: **1**
Current: **4**
Estimated End: **4**



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Technology Areas

Primary:

- TX05 Communications, Navigation, and Orbital Debris Tracking and Characterization Systems
  - TX05.2 Radio Frequency
    - TX05.2.2 Power-Efficiency

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System